

COMPLETE LISTING OF AMENDED CLAIMS

- 1-11. (canceled)
12. (currently amended) A multitube reactor (13) which has a catalyst tube bundle (18) comprising numerous parallel catalyst tubes (17) arranged within an outer wall (15), said catalyst tube bundle (18) having from 10,000 to 50,000 catalyst tubes (17), and having means for introducing and discharging a heat transfer medium said means being adapted such that the heat transfer medium is essentially conveyed radially or transversely around the catalyst tubes, ~~optionally redirected to assume a meandering path~~, wherein the ratio t/d_a of tube spacing t to the external diameter d_a of a catalyst tube is in the range from 1.3 to 1.6.
13. (previously presented) A multitube reactor as claimed in claim 12, wherein the ratio t/d_a of tube spacing t to the external diameter d_a of a catalyst tube (17) rises with increasing transverse dimensions of the catalyst tube bundle (18).
14. (previously presented) A multitube reactor as claimed in claim 12, wherein the catalyst tube bundle (18) has an essentially circular cross section having an external diameter d_{RBa} of more than 4 m.
15. (previously presented) A multitube reactor as claimed in claim 14, wherein the external diameter d_{RBa} of the catalyst tube bundle (18) is from 4 m to 12 m.
16. (previously presented) A multitube reactor as claimed in claim 15, wherein the external diameter d_{RBa} of the catalyst tube bundle (18) is from 4 m to 10 m and the ratio t/d_a of tube spacing t to the external diameter d_a of a catalyst tube (17) is in the range from 1.3 to 1.5.

17. (previously presented) A multitube reactor as claimed in claim 12, wherein the catalyst tube bundle (18) has an essentially rectangular cross section with a tube bundle depth d_{RBt} measured parallel to the flow direction of the heat transfer medium of at least 1.3 m.
18. (previously presented) A multitube reactor as claimed in claim 17, wherein the depth d_{RBt} of the catalyst tube bundle (18) is from 1.3 to 4 m.
19. (previously presented) A multitube reactor as claimed in claim 12, wherein the reactor is divided, in the longitudinal direction of the catalyst tubes (17), into at least two zones (36,37), with a flow of heat transfer medium of different temperature being provided in each zone.
20. (withdrawn, currently amended) A method for carrying out a catalytic gas-phase reactions reaction, said method comprising the use of a introducing gas-phase reactants to the multitube reactor as claimed in claim 12.
21. (withdrawn, currently amended) A method for carrying out a catalytic gas-phase reaction as claimed in claim 20, wherein the reaction is an oxidation reactions reaction, in particular for the preparation of phthalic anhydride, maleic anhydride, acrylic acid, acrolein, methacrylic acid, glyoxal, phosgene, hydrocyanic acid or vinyl formamides, said method comprising the use of a multitube reactor as claimed in claim 12.
22. (new) The method of claim 21, wherein a phthalic anhydride, maleic anhydride, acrylic acid, acrolein, methacrylic acid, glyoxal, phosgene, hydrocyanic acid or vinyl formamide is prepared.
23. (new) The method of claim 21, wherein a phthalic anhydride is prepared.

24. (new) The method of claim 22, wherein heat transfer medium is conveyed radially or transversely around the catalyst tubes in a meandering path.
25. (new) The method of claim 24, wherein the heat transfer medium is a salt melt and flows at from 10,000 to 20,000 m³.
26. (new) A multitube reactor as claimed in claim 12, wherein said means for introducing and discharging a heat transfer medium are adapted so as to direct the heat transfer medium in a meandering path.
27. (new) A multitube reactor as claimed in claim 12, wherein said catalyst tube bundle has from 10,000 to 30,000 catalyst tubes.